



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-1118; Project Identifier MCAI-2020-00516-E; Amendment 39-21451; AD 2021-05-08]

RIN 2120-AA64

Airworthiness Directives; Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.) Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Safran Helicopter Engines, S.A. Arriel 2C, 2C1, 2S1, and 2S2 model turboshift engines. This AD was prompted by investigations by the manufacturer following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), where cracks were found on the soldered joints of torque conformation boxes. This AD requires performing initial and repetitive inspections of the resistance values of the torque conformation box and, depending on the results of the inspections, replacement of the torque conformation box. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Safran Helicopter Engines, S.A., Avenue du 1er Mai, Tarnos, France; phone: +33 (0) 5 59 74 45 11. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also

available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Safran Helicopter Engines, S.A. Arriel 2C, 2C1, 2S1, and 2S2 model turboshaft engines. The NPRM published in the *Federal Register* on December 10, 2020 (85 FR 79438). The NPRM was prompted by investigations by the manufacturer following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), where cracks were found on the soldered joints of torque conformation boxes. In the NPRM, the FAA proposed to require performing initial and repetitive inspections of the resistance values of the torque conformation box and, depending on the results of the inspections, replacement of the torque conformation box. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0110, dated May 21, 2019 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

It was reported that, during investigations following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), cracks were found on the soldered joints of certain torque conformation boxes. Although no events in operation were reported of One Engine Inoperative (OEI) ratings maximum power unavailability, the failure mode analysis for these boxes demonstrated that such event could not be excluded.

This condition, if not detected and corrected, could lead to engine in-flight shut-down, possibly resulting in reduced control of the helicopter.

To address this potential unsafe condition, SAFRAN Helicopter Engines issued the SB [Service Bulletin], to provide instructions for repetitive checks of the box resistance values.

For the reasons described above, this [EASA] AD requires repetitive checks of the affected part and, depending on findings, replacement of the affected part with a serviceable part.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

Related Service Information under 1 CFR Part 51

The FAA reviewed Safran Helicopter Engines Mandatory Service Bulletin (MSB) No. 292 72 2868, Version A, dated December 2018. This service information specifies procedures for performing an inspection of the resistance values of the torque

conformation box. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Costs of Compliance

The FAA estimates that this AD affects 257 engines installed on helicopters of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Inspect resistance values of the torque conformation box	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$21,845

The FAA estimates the following costs to do any necessary replacement that would be required based on the results of the inspections. The agency has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the torque conformation box	1 work-hour x \$85 per hour = \$85	\$1,841	\$1,926

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-05-08 Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.): Amendment 39-21451; Docket No. FAA-2020-1118; Project Identifier MCAI-2020-00516-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.) Arriel 2C, 2C1, 2S1, and 2S2 model turboshaft engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7712, Engine BMEP/Torque Indicating.

(e) Unsafe Condition

This AD was prompted by investigations by the manufacturer following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), where cracks were found on the soldered joints of torque conformation boxes. The FAA is issuing this AD to prevent failure of the torque conformation box. The unsafe condition, if not addressed, could result in failure of the engine, in-flight shutdown, and loss of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For engines with the torque conformation box in pre-modification TU 34 configuration, installed on Arriel 2C and 2C1 model turboshaft engines; pre-modification TU 34 or post-modification TU 188 configuration, installed on Arriel 2S1 model turboshaft engines; or post-modification TU 188 configuration, installed on Arriel 2S2 model turboshaft engines:

(i) Within 600 engine hours (EHs) or 180 days after the effective date of this AD, whichever occurs first, perform an initial inspection of the resistance values of the torque conformation box.

Note 1 to paragraph (g)(1)(i): You may delay the initial inspection by up to 60 EHs to align with other scheduled maintenance tasks.

(ii) Thereafter, perform repetitive inspections of the resistance values of the torque conformation box before exceeding 600 EHs since the last inspection of the resistance values of the torque conformation box.

(2) Use the Accomplishment Instructions, paragraph 2.3.2 or 4.3.2, of Safran Helicopter Engines Mandatory Service Bulletin No. 292 72 2868, Version A, dated December 2018, to perform the inspections of the resistance values of the torque conformation box required by paragraph (g)(1) of this AD.

(3) If, during any inspection required by paragraph (g)(1) of this AD, a non-conforming resistance value is found, before further flight, remove the torque conformation box from service and replace it with a part eligible for installation.

(h) Definition

For the purpose of this AD, a “part eligible for installation” is a zero hour torque conformation box or a torque conformation box that has been inspected as required by paragraph (g)(1) of this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2019-0110, dated May 21, 2019, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Safran Helicopter Engines Mandatory Service Bulletin No. 292 72 2868, Version A, dated December 2018.

(ii) [Reserved]

(3) For Safran Helicopter Engines service information identified in this AD, contact Safran Helicopter Engines, S.A., Avenue du 1er Mai, Tarnos, France; phone: +33 (0) 5 59 74 45 11.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on February 19, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-05046 Filed: 3/10/2021 8:45 am; Publication Date: 3/11/2021]